IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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| Applicants: | Abdelgader Legnain et al. | § | Art Unit: | 2618 |
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| Serial No.: | 10/698,395 | § | Confirmation No.: | 2726 |
| | | § | | |
| Filed: | November 3, 2003 | § | Examiner: | Raymond S. Dean |
| | | § | | |
| For: | Antenna Systems with Common Overhead for CDMA Base Stations | § | Atty. Dkt. No.: | NRT.0206P1US (15658ROUS02U) |
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**Mail Stop AF**
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

It is respectfully submitted that the obviousness rejection of claim 1 over Rotstein, Kuwahara, and Martinez-Munoz is erroneous.

To make a determination under 35 U.S.C. § 103, several basic factual inquiries must be performed, including determining the scope and content of the prior art, and ascertaining the differences between the prior art and the claims at issue. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 U.S.P.Q. 459 (1965). Moreover, as held by the U.S. Supreme Court, it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine reference teachings in the manner that the claimed invention does. *KSR International Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1741, 82 U.S.P.Q.2d 1385 (2007).

With respect to claim 1, the Office Action conceded that Rotstein fails to disclose the following elements of claim 1:

> for each antenna, a respective signal generator to generate a respective signal comprising a common overhead component common to all the signals, using a spreading code common to all the signal generators;

> for each pair of said antennas having overlapping beams within said coverage area, the respective pair of signal generators to use the spreading code with a mutual micro-timing offset that is large enough that destructive cancellation substantially does not occur between the common overhead components transmitted on the overlapping beams, wherein a first spreading code used to generate a signal by a first of the pair of signal generators is offset by the mutual micro-timing from a second spreading code used to generate a signal by a second of the pair of signal generators.

05/26/2010 Office Action at 3-4. Instead, the Office Action cited Kuwahara and Martinez-Munoz as purportedly disclosing the subject matter of claim 1 conceded to be missing from Rotstein. *Id.* at 4-5.

Specifically, the Office Action cited the following passages of Kuwahara: column 7, lines 6-10, 33-37. *Id.* at 4. The cited passages in column 7 of Kuwahara refer to the example shown in Fig. 8 of Kuwahara where for transmitting a pilot signal, a constant time is provided to rotate the pilot signal between beams. However, the rotation of transmission of the pilot signal as depicted in Fig. 8 of Kuwahara is quite different from the subject matter of claim 1, which recites the use of different **spreading codes** that are offset from each other by a mutual micro-timing offset. There is no hint given in Kuwahara of a first spreading code being used to generate a signal by a first of a pair of signal generators (that produce signals in overlapping beams within a coverage area) being offset by the mutual micro-timing offset from a second spreading code used to generate a signal by a second of the pair of signal generators.

The third reference, Martinez-Munoz, also provides no hint of the foregoing subject matter of claim 1. The Office Action pointed specifically to page 6 of Martinez-Munoz, which notes that three transmit beams each has the same PN offset. This page of Martinez-Munoz also refers to overhead channels common to the beams. However, to avoid destructive interference in the beam overlap regions, Martinez-Munoz teaches a technique to continuously shift phase between the beams to eliminate static nulls. Martinez-Munoz, page 6. Shifting the phase between beams, as taught by Martinez-Munoz, involves a technique that is clearly different from the technique of claim 1, where a first spreading code used to generate a signal by a first of the pair of signal generators is offset by the mutual micro-timing from a second spreading code used to generate a signal by a second of the pair of signal generators. As further recited in claim 1, for each pair of the antennas having overlapping beams within the coverage area, the respective pair of signal generators use the spreading code with a mutual micro-timing offset that is large

enough that destructive cancellation substantially does not occur between the common overhead components transmitted on the overlapping beams. The use of the mutual micro-timing offset technique of claim 1 is clearly different from shifting phase between beams to eliminate static nulls, as taught by Martinez-Munoz.

In view of the foregoing, it is clear that even if Rotstein, Kuwahara, and Martinez-Munoz could be hypothetically combined, the hypothetical combination of all three references would still not lead to the claimed subject matter of claim 1.

Moreover, no reason existed that would have prompted a person of ordinary skill in the art to combine Rotstein and Kuwahara to achieve the claimed invention. In Rotstein, different PN offsets are used to define different adjacent sectors within a cell. In Fig. 3 of Rotstein, four distinct PN offsets (A, B, C, D) are used, with the same PN offset reused in sectors that are spatially separated by 120°. Rotstein, 2:44-49. According to Rotstein, by assigning different PN offsets to neighboring sectors, interference between **distinct** pilot channels in corresponding **distinct** sectors is reduced, which would result in reduced pilot pollution. Rotstein, 1:26-28; 40-43; 2:60-62. Thus, Rotstein is concerned with reducing the problem of **different pilot** channels in different corresponding **sectors** of a cell interfering with each other. Significantly, it is noted that the teaching in Rotstein of distinct pilot channels in distinct sectors is quite different from what is recited in claim 1, namely that a **common** overhead component is common to all signals generated by respective signal generators that are transmitted by antennas.

The teachings of Rotstein are also inconsistent with the teachings of Kuwahara and Martinez-Munoz. A person of ordinary skill in the art would therefore not have been prompted to combine the teachings of Rotstein, Kuwahara, and Martinez-Munoz, to achieve the claimed subject matter. Moreover, Rotstein would have led a person of ordinary skill in the art to a solution in which distinct pilot channels in distinct sectors are communicated using different PN offsets to avoid pilot channel pollution, which is inconsistent with providing a common overhead component common to all signals, as recited in claim 1.

A person of ordinary skill in the art would have found no reason to combine the teachings of Rotstein, Kuwahara, and Martinez-Munoz. Therefore, claim 1 is non-obvious over Rotstein, and Kuwahara, and Martinez-Munoz.

Independent claim 26 is similarly non-obvious over Rotstein, Kuwahara, and Martinez-Munoz.

Dependent claims are allowable for at least the same reasons as corresponding independent claims.

In view of the allowability of base claims, it is respectfully submitted that the obviousness rejections of dependent claims over Rotstein, Kuwahara, Martinez-Munoz, and other references have been overcome.

In view of the foregoing, it is respectfully requested that the final rejections of the claims be withdrawn. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 14-1315 (15658ROUS02U).

Respectfully submitted,

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